HP TFT7600 Rackmount Keyboard and Monitor User Guide

November 2005 (First Edition)
Part Number 365378-001

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Audience assumptions

This document is for the person who installs racks and rack products. This procedure is performed only by trained personnel. HP assumes you are qualified in performing installations and trained in recognizing hazards in rack products.

Contents

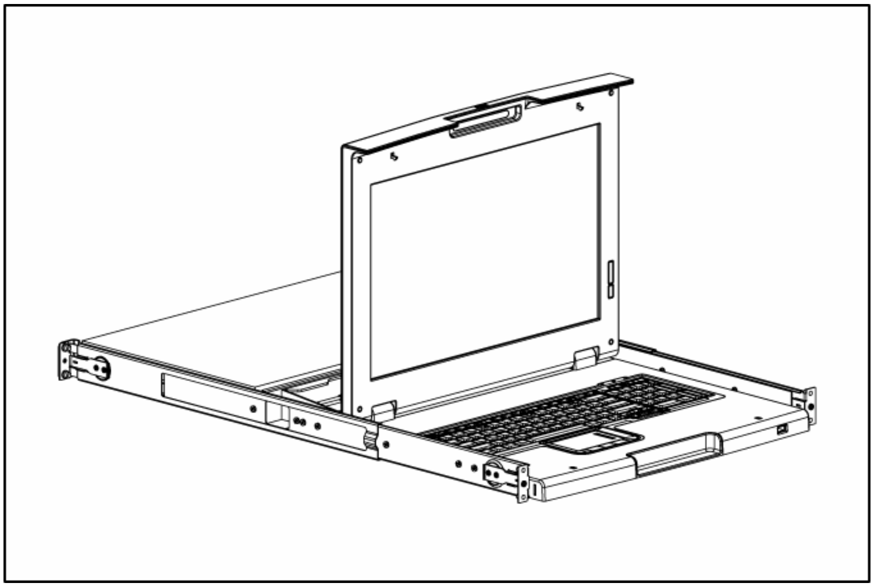
Introduction

In this section

Introduction

The HP TFT7600 RKM is a rack-mountable 1U integrated flat-panel monitor and keyboard with touchpad.

NOTE: 1U = 1.75 inches or 4.45 cm



The TFT7600 RKM is mounted on rails with space available to add a 1U KVM switch box behind the unit. The TFT7600 RKM can be used with all HP 5000 and 10000 Series racks.

The TFT7600 RKM uses a 43.18-cm (17-in) color-active matrix TFT LCD.

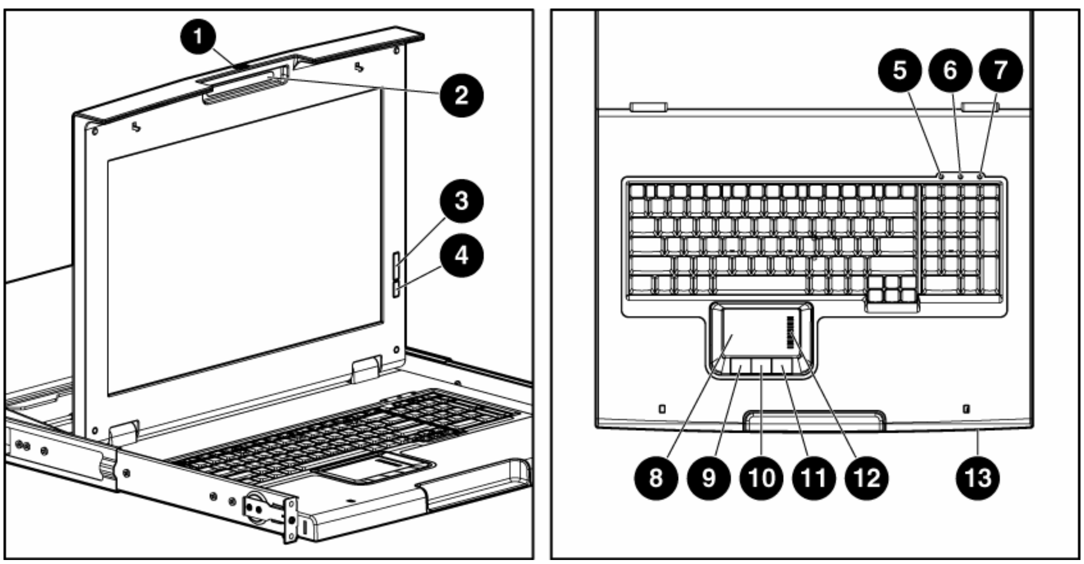
TFT7600 RKM features

The following table identifies the TFT7600 RKM features:

Feature	**Description**
Display	43.18-cm (17-in) viewable area display
Resolution	640 x 480 (VGA) through 1280 x 1024 (SXGA) and 1440 x 900 (WXGA+)

Feature	Description
Monitor input	Plugs into a standard VGA connector; does not require a special graphics adapter card
Plug and Play	Plug-and-Play capability if supported by your system
OSD	Available in seven languages: • English • French • German • Italian • Japanese • Simple Chinese • Spanish
Keyboard with touchpad	Three button touchpad with scroll bar
Power supply	12v DC/30 Watt
Scroll keys	Four scroll keys (inverted T)

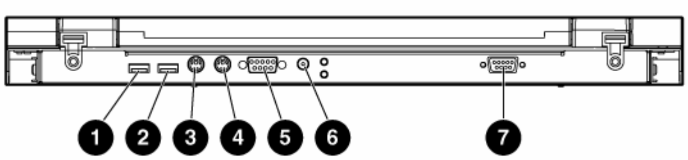
Components



Reference number	Component	Function
1	Display release latch	Pushes down to unlatch the display assembly
2	Blue LED	Turns on when the display is closed Helps identify the HP TFT7600 in a rack
3	OSD scroll up and down button	Used to scroll in the OSD menu and adjust functions

Reference number	Component	Function
4	OSD activation button	• Launches OSD menus • Selects • Exits menus and OSD
5	Scroll lock LED	
6	Cap lock LED	
7	Number lock LED	
8	Touchpad	
9	Left pick button	
10	Middle pick button	
11	Right pick button	
12	Scroll bar	
13	USB pass thru	Pass thru to the rear USB port (callout 1 in the following figure)

Rear components



Reference number	Component	Function
1	USB pass thru	Connects to a KVM switch virtual media port
2	USB Keyboard/Mouse connector	
3	PS2 Keyboard connector	
4	PS2 Mouse connector	
5	VGA input connector	
6	Power connection	
7	Serial firmware port	Enables user to update TFT7600 firmware

Installation

In this section

Installing the TFT7600 RKM

The following section covers the installation and setup procedure for installing the TFT7600 RKM.

Kit contents

The kit contains:

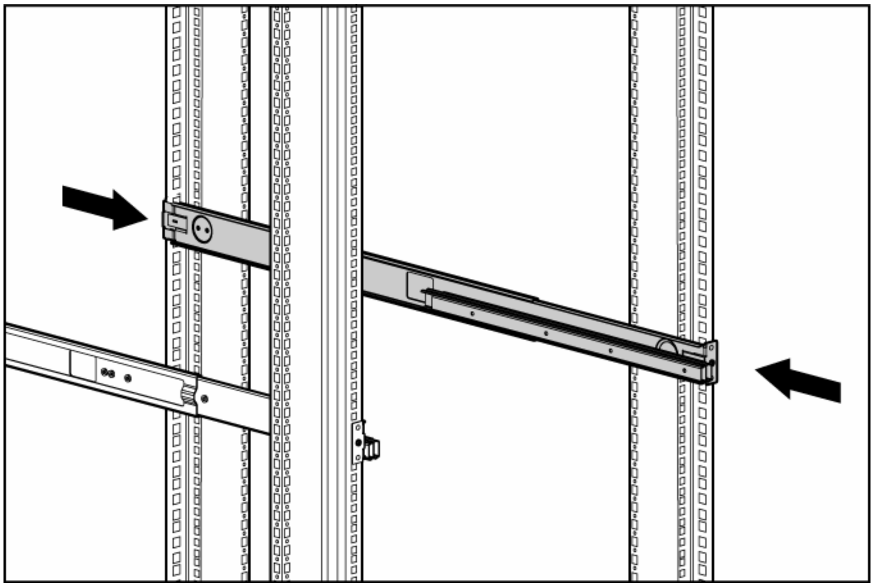
- TFT7600 RKM (1)
- M6 screws (4)
- 6-32 screws (5)
- HP 1U Adjustable Toolless Rails (2)
- Cable management arm, power adapter with brace rail (1)
- Lock plates (2)
- USB cables (2)
- PS2 cables (2)
- Video cable
- Power cords (2)
- USB cable labels
- Documentation

This kit contains extra hardware for your convenience.

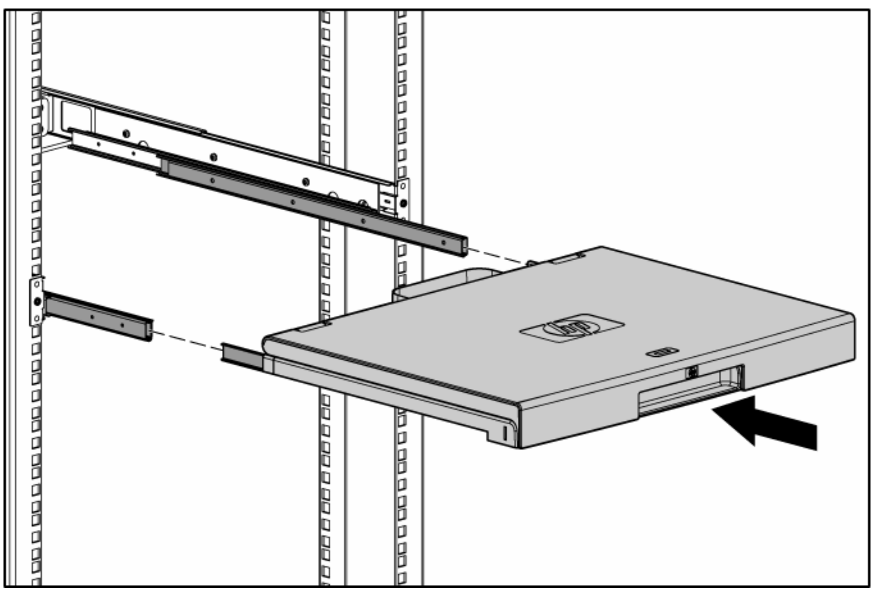
Installing the HP TFT7600 RKM

1. Align the HP 1U Adjustable Toolless Rails with the holes marked on the rack, and snap them into place.
   a. Snap one end of the HP 1U Adjustable Toolless Rails into the Retma rails.
   b. Extend the other half of the HP 1U Adjustable Toolless Rails to meet the appropriate rack depth, and snap them into place.

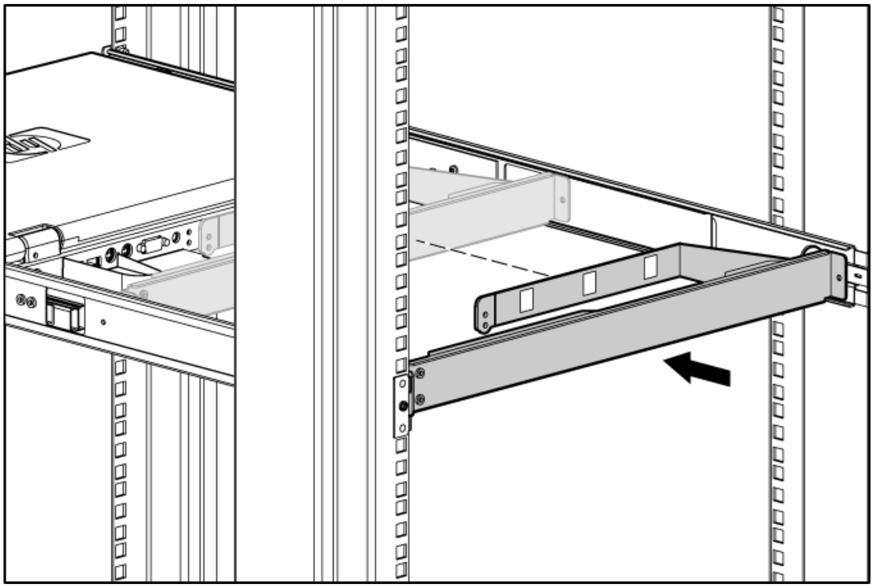
NOTE: If the HP 1U Adjustable Toolless Rails do not snap into place, be sure that they align with the holes marked on the rack. The holes marked on the rack must be in the same location for the front and rear of the rack.



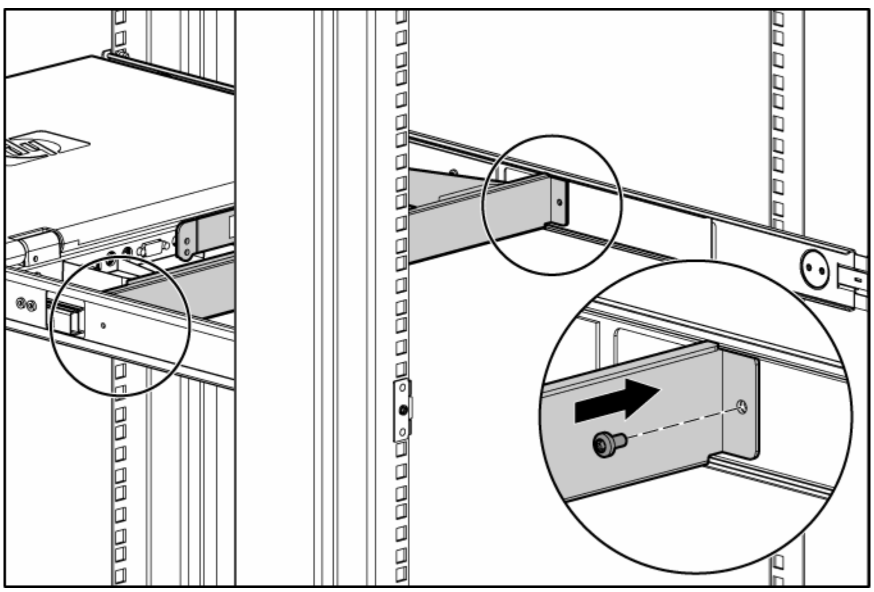
2. Extend the inner slides until they lock into place.
3. Align the unit with the extended inner slides, inserting the unit into the rack.



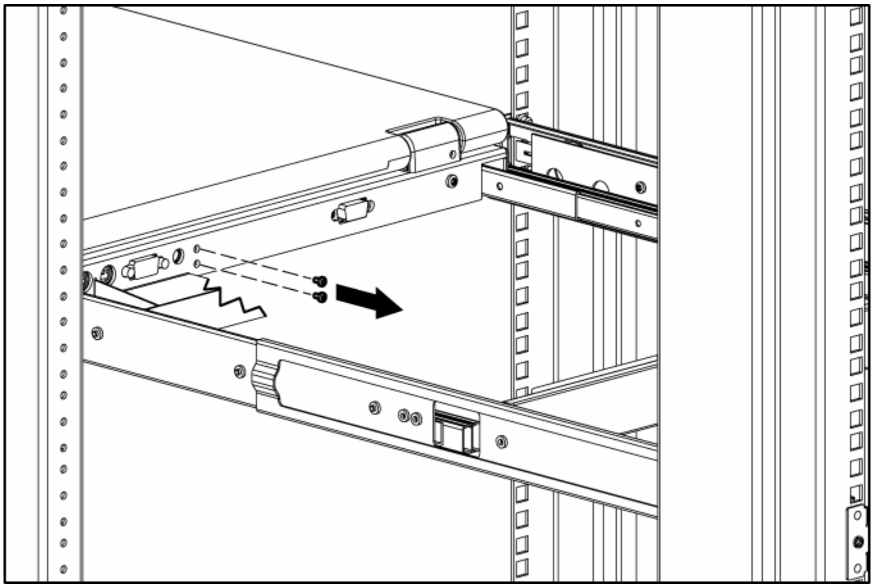
4. Slide the brace rail assembly in between the HP 1U Adjustable Toolless Rails from the rear of the rack.



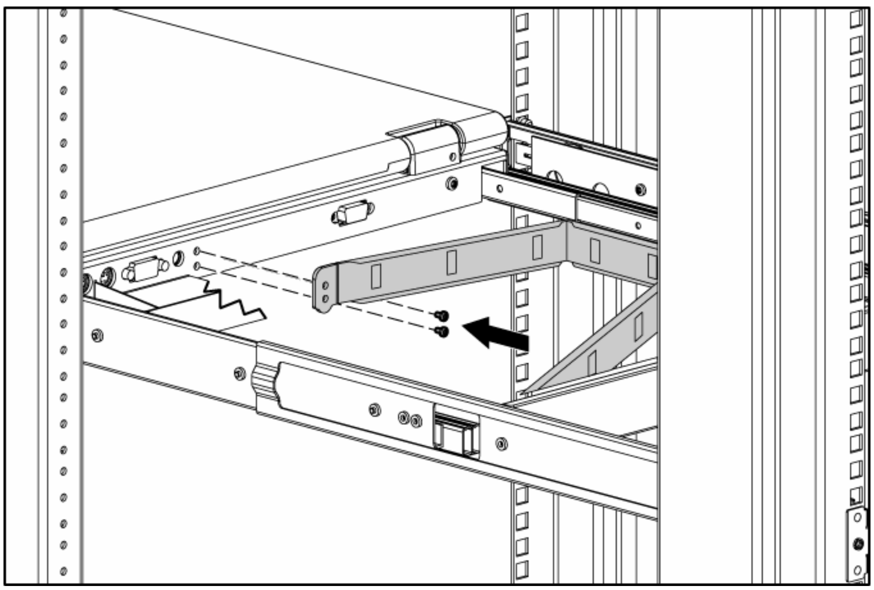
5. Align the screw holes on the brace rail with the screw holes on the HP 1U Adjustable Toolless Rails.
6. Secure the brace rail to the HP 1U Adjustable Toolless Rails with two 6-32 screws.



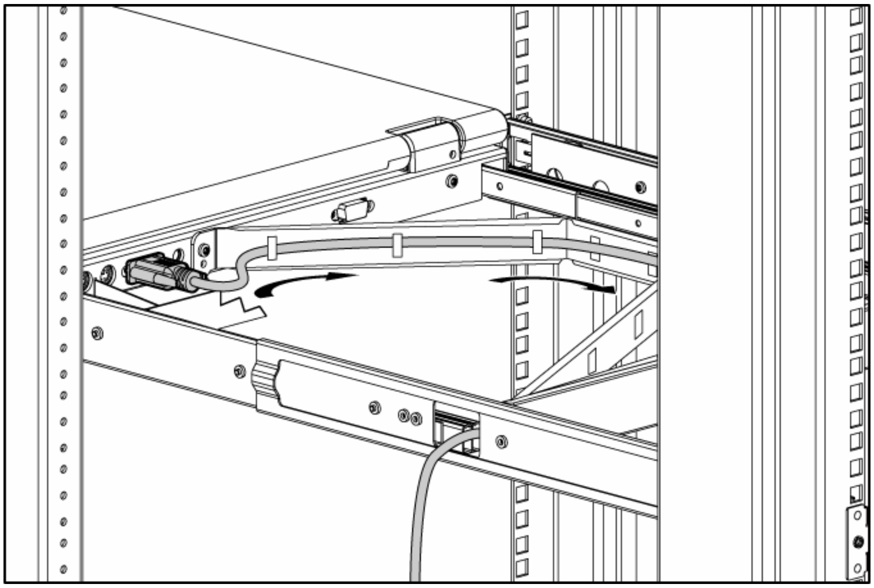
7. Remove the two shipping screws from the rear of the HP TFT7600 and discard the screws.



8. Attach the cable management arm to the rear of the unit with two 6-32 screws, supplied in the kit.



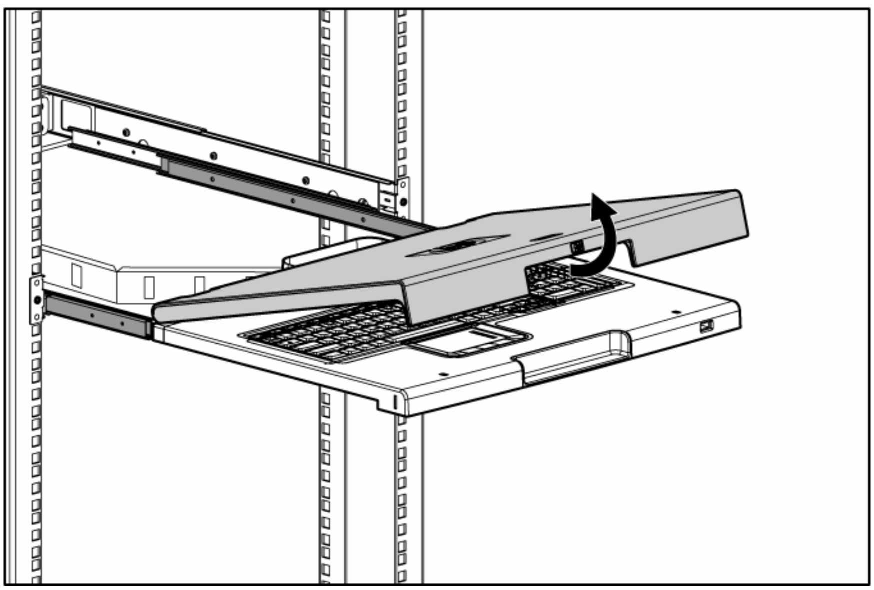
9. Connect and route the cables through the cable management arm and unit opening.



Installation is complete.

Accessing the TFT7600 RKM

1. Gently extend the TFT7600 RKM until the slides lock.
2. Push the display release latch then lift the display.



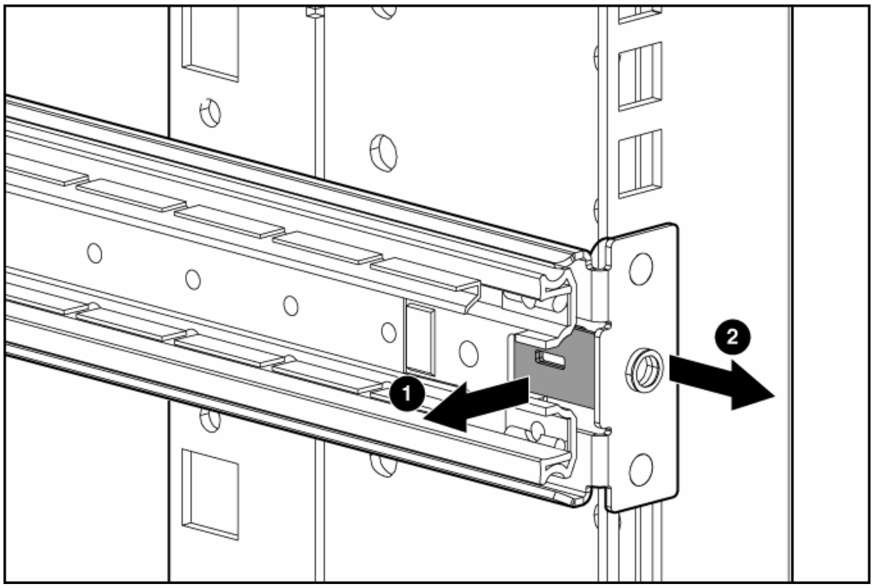
Removing the HP TFT7600 RKM

To remove the TFT7600 RKM, reverse the order of the steps listed in the Installing the HP TFT7600 RKM (on page 8) section.

Removing the HP 1U Adjustable Toolless Rails

1. Locate the spring release.
2. Place your hand on the outside of the HP 1U Adjustable Toolless Rails so that you can move the spring release.
3. Gently move the spring release toward the inside of the rack (1) while moving the HP 1U Adjustable Toolless Rails out toward you and away from the rack (2).

NOTE: If you cannot gain access to the spring release from the outside of the HP 1U Adjustable Toolless Rails, a tool might be required to unlock the spring release from the inside of the HP 1U Adjustable Toolless Rails.



4. Repeat the previous steps for the other HP 1U Adjustable Toolless Rail.

Removing PS2 cables with cable-locking mechanism

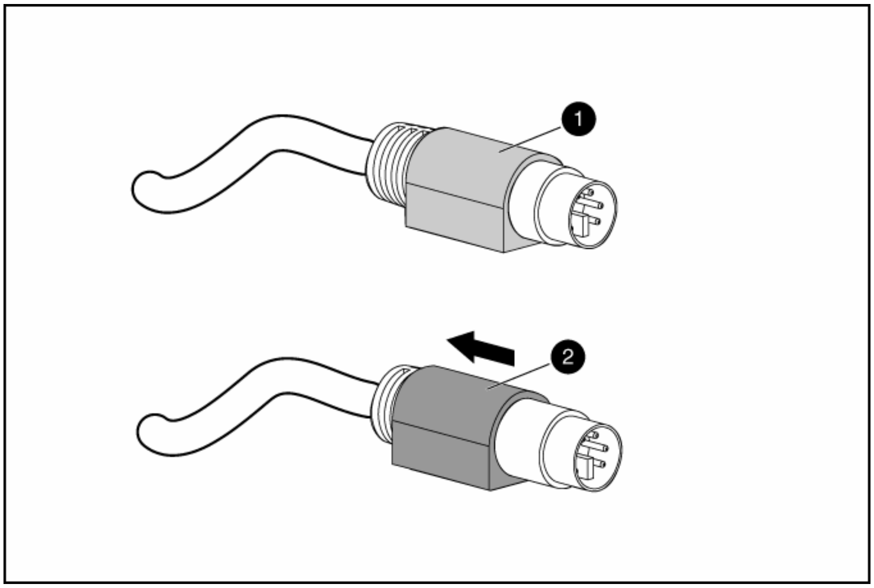
PS2 cables have a locking mechanism to provide a secure cable connection. You must use proper procedures when disconnecting these cables.

CAUTION: Failure to follow proper disconnect procedures could result in damage to the cable or to your unit.

To properly disconnect a PS2 cable:

1. Grasp the housing.

2. Slide it back to release the locking mechanism and gently pull to remove the cable.

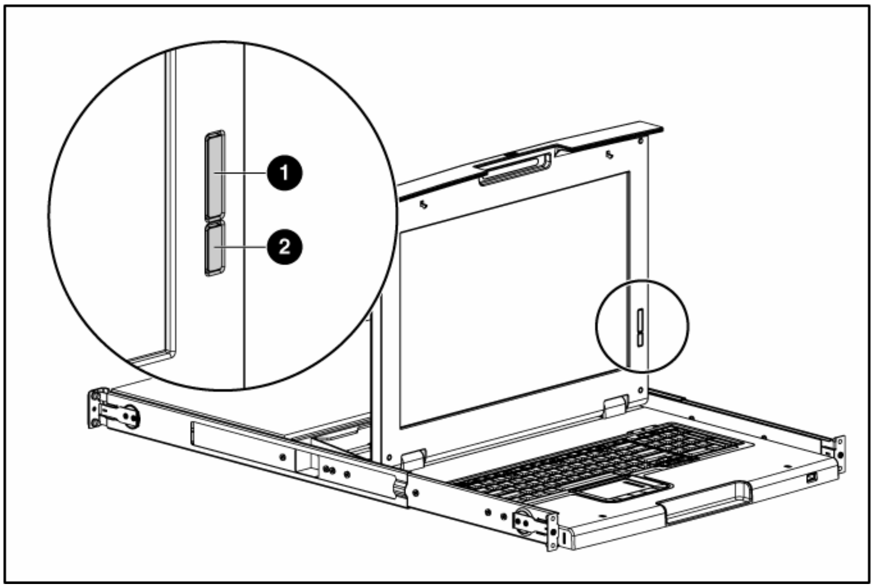


Operational overview

In this section

On-screen display

The OSD buttons are used to operate the TFT7600 RKM OSD menus.



Reference number	Component	Function
1	OSD scroll up and down button	Used to scroll in the OSD menu and adjust the function
2	OSD activation button	• Launches OSD menus • Selects • Exits menus and OSD

Launching OSD menu

To launch the OSD menu:

1. Press the OSD activation button on the front panel. The main menu displays on the screen.
2. To select a menu item, scroll up or down by pressing OSD scroll up and down button.

3. Press the OSD activation button again to select your choice. A second level will expand menu items.

Navigating OSD

To navigate through the OSD menus and functions:

- Use the Up (+) or Down (-) button to scroll through the OSD menu or an OSD sub-menu. The Up (+) and Down (-) button are also used to adjust or change a function setting.
- Use the OSD activation button to select a sub-menu or a function.

Example:

To exit the OSD menu:

1. Press the **Down (-)** button to scroll to the Exit function.
2. Press the **OSD activation** button to select the Exit function and exit the OSD menu.

OSD menu

The OSD menu provides access to different display settings and functions, enabling the user to customize the HP TFT7600 display settings.

Brightness/Contrast

The Brightness/Contrast option contains the following options:

- Brightness
- Contrast
- Exit sub-menu

Brightness

The Brightness option displays a slider bar to enable the adjustment of the back light brightness.

Contrast

The Contrast option displays a slider bar to enable the adjustment of the screen contrast. Contrast adjustments are more discernable when the background is white.

Image control

The Image control option contains the following sub-menu:

- Horizontal position
- Vertical position
- Clock
- Phase
- Exit sub-menu

Horizontal position

The H position option displays a slider bar to enable the adjustment of the screen's horizontal position.

The center of the bar is obtained from the factory-preset value for Horizontal Position. At value=MIN, the selection of + positioning response might vary between XGA and SXGA panels. This is caused by physical limitations at MIN OSD placement.

Vertical position

The V position option displays a slider bar to enable the adjustment of the screen's vertical position.

The center of the bar is obtained from the factory-preset value for Vertical Position.

Clock

The Clock option displays a slider bar to enable the adjustment of the Horizontal Clocks.

Phase

The Phase option displays a slider bar to enable the adjustment of the analog signals phase.

Advanced

The Advanced option provides access to the following options:

- OSD settings menu
- Exit sub-menu

OSD settings

The OSD settings option provides access to the following options:

- Lock OSD settings
    - Yes
    - No
- Timeout
- V position
- H position
- Exit sub-menu

Lock OSD settings

The Lock OSD settings option locks or unlocks the OSD settings.

Timeout

The Timeout option displays a slider bar at the right side of the OSD display to enable the adjustment of OSD timeout. The timeout ranges from 5 to 60 seconds with 1-second intervals. The default setting is 10 seconds.

Vertical position

The V position option enables the location of the OSD window to move up or down on the screen.

Horizontal position

The H position option enables the location of the OSD window to move left or right on the screen.

Auto Configuration

The Auto Configuration option performs four functions automatically:

- Auto Level—Automatically adjusts the black and white levels of the screen
- Auto Position—Automatically adjusts the position of the screen
- Auto Phase—Automatically adjusts the phase
- Auto Clock—Automatically adjusts the output clock per line to match the input

Factory settings

The Factory settings option enables the user to set the HP TFT7600 back to its original factory settings. The following options are available in the Factory settings menu list:

- Yes
- No
- Exit sub-menu

Language

The Language option allows the user to change the language in which the menu options are displayed. The following languages are available:

- English
- French
- German
- Italian
- Japanese
- Simple Chinese
- Spanish

Information

The Information option provides the following unit information:

- Current mode
- Recommended mode
- SW version
- Exit sub-menu

Maintenance

In this section

Maintenance and shipping guidelines

This section covers maintenance and shipping guidelines for your TFT7600 RKM.

To protect your unit from overheating and other types of damage:

- Use only a power source and connection appropriate for this unit, as indicated on the marking label and back plate.
- Use only the AC adapter provided with the unit or an authorized replacement adapter from Hewlett-Packard.
- If an extension cord or power strip is used, be sure that the cord or strip is rated for the product. Also, be sure that the total ampere ratings of all products plugged into the extension cord or power strip do not exceed 80 percent of the extension cord or power strip ampere ratings limit.
- Do not overload an electrical outlet, power strip, or convenience receptacle. The overall system load must not exceed 80 percent of the branch circuit rating. If power strips are used, the load should not exceed 80 percent of the power strip input rating.
- Install the unit near an outlet that you can reach easily. Disconnect the unit by grasping the plug firmly and pulling it from the outlet. Never disconnect the plug by pulling the cord.
- Disconnect the unit from the wall before cleaning. Do not use liquid cleaners or aerosol cleaners.
- Slots and openings in the monitor are provided for ventilation. These openings must not be blocked or covered. Never push objects of any kind into these slots or openings.
- Do not drop the unit or place it on an unstable surface.
- Do not allow anything to rest on the power cord. Do not walk on the cord.
- Keep the unit in a well-ventilated area, away from excessive light, heat, and moisture. Keep the monitor away from high-capacity transformers, electric motors, and other strong magnetic fields.
- Do not attempt to service this product yourself. Adjust only those controls that are covered by the operating instructions. If the unit is not operating properly or has been dropped or damaged, contact your HP authorized dealer, reseller, or service provider.

Cleaning the monitor

To clean the display:

1. Turn off and unplug the unit.
2. Dust the panel by wiping the screen with a soft, clean cloth.

If the screen requires additional cleaning, use any anti-static LCD screen cleaner.

△ **CAUTION:** Do not use benzene, thinner, ammonia, or any volatile substance to clean the monitor screen or cabinet. These chemicals might damage the monitor. Never use water to clean an LCD screen.

Shipping the TFT7600 RKM

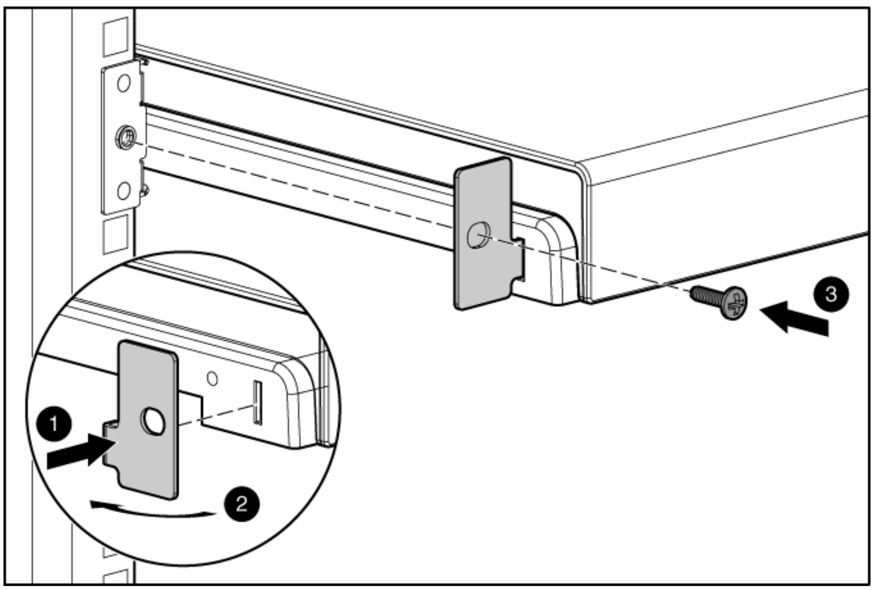
Keep the original packing box in a storage area in case you must move or ship your RKM.

Moving a rack with the TFT7600 RKM installed

When moving the TFT7600 RKM installed in a rack, HP recommends that you install the lock plates, included in your kit, on each side of the unit and rack.

To install lock plates:

1. Place the lock plate into the slot and rotate it back.
2. Insert one M6 screw into the hole on the lock plate, securing the unit to the rack.
3. Repeat steps 1 and 2 to install the other lock plate.



Specifications

In this section

TFT7600 RKM specifications

Item	**Specifications**
Display size	43.18 cm (17 in)
Display type	Flat panel, active matrix-TFT LCD
Viewable image size	43.18 cm (17 in) diagonal
Maximum weight (unpacked)	4.54 kg (10 lb)
Maximum height	4.23 cm (1.68 in)
Maximum depth	42.31 cm (16.66 in)
Maximum width	43.2 cm (16.97 in)
Resolution	1440 x 900 (WXGA+) (recommended for maximum performance) 640 x 480 (VGA) through 1280 x 1024 (SXGA)
Response time	<25 ms
Brightness	>190 (cd/m^2)
Contrast ratio	>350:1

Environmental temperature requirements (independent of altitude)

Item	**Specifications**
Operating temperature	0° to 40° C (32° to 104° F)
Storage temperature	-20° to 60° C (68° to 140° F)
Humidity (Non-Condensing)	
Operating	20% to 90%
Non-operating	5% to 95%
Power source	
Input rating	90 to 264 VAC, 47 to 63 Hz
Power consumption	<30 Watts

Regulatory compliance notices

In this section

Regulatory compliance identification numbers

For the purpose of regulatory compliance certifications and identification, this product has been assigned a unique regulatory model number. The regulatory model number can be found on the product nameplate label, along with all required approval markings and information. When requesting compliance information for this product, always refer to this regulatory model number. The regulatory model number is not the marketing name or model number of the product.

Federal Communications Commission notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (for example, personal computers). The FCC requires devices in both classes to bear a label indicating the interference potential of the device as well as additional operating instructions for the user.

FCC rating label

The FCC rating label on the device shows the classification (A or B) of the equipment. Class B devices have an FCC logo or ID on the label. Class A devices do not have an FCC logo or ID on the label. After you determine the class of the device, refer to the corresponding statement.

Class A equipment

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates,

uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Class B equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit that is different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Declaration of conformity for products marked with the FCC logo, United States only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding this product, contact us by mail or telephone:

- Hewlett-Packard Company
P. O. Box 692000, Mail Stop 530113
Houston, Texas 77269-2000
- 1-800-HP-INVENT (1-800-474-6836). (For continuous quality improvement, calls may be recorded or monitored.)

For questions regarding this FCC declaration, contact us by mail or telephone:

- Hewlett-Packard Company
P. O. Box 692000, Mail Stop 510101
Houston, Texas 77269-2000
- 1-281-514-3333

To identify this product, refer to the part, series, or model number found on the product.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hewlett-Packard Company may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

Canadian notice (Avis Canadien)

Class A equipment

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Class B equipment

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Union regulatory notice

This product complies with the following EU Directives:

- Low Voltage Directive 73/23/EEC
- EMC Directive 89/336/EEC

Compliance with these directives implies conformity to applicable harmonized European standards (European Norms) which are listed on the EU Declaration of Conformity issued by Hewlett-Packard for this product or product family.

This compliance is indicated by the following conformity marking placed on the product:

This marking is valid for non-Telecom products and EU harmonized Telecom products (e.g. Bluetooth).

This marking is valid for EU non-harmonized Telecom products.

*Notified body number (used only if applicable—refer to the product label)

Japanese notice

ご使用になっている装置にVCCIマークが付いていましたら、次の説明文をお読み下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

VCCIマークが付いていない場合には、次の点にご注意下さい。

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BSMI notice

警告使用者:

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Korean notice

Class A equipment

A급 기기 (업무용 정보통신기기)

이 기기는 업무용으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며, 만약 잘못판매 또는 구입하였을 때에는 가정용으로 교환하시기 바랍니다.

Class B equipment

B급 기기 (가정용 정보통신기기)

이 기기는 가정용으로 전자파적합등록을 한 기기로서 주거지역에서는 물론 모든지역에서 사용할 수 있습니다.

Disposal of waste equipment by users in private households in the European Union



This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Power cord requirement

The power cord should be approved for use in your country. The power cord must be rated for the product and for the voltage and current marked on the electrical ratings label of the product. The voltage and current rating for the cord should be greater than the voltage and current rating marked on the product. In addition, the diameter of the wire must be a minimum of 1.00 mm^2 or 18 AWG, your maximum length may be up to 3.66 m (12 ft).

Power cord statement for Japan

製品には、同梱された電源コードをお使い下さい。
同梱された電源コードは、他の製品では使用出来ません。

Electrostatic discharge

In this section

Preventing electrostatic discharge

To prevent damaging the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Grounding methods to prevent electrostatic discharge

Several methods are used for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm ±10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have an authorized reseller install the part.

For more information on static electricity or assistance with product installation, contact an authorized reseller.

Technical support

In this section

HP Technical Support

You can reach HP automated support services 24 hours a day, seven days a week, at no charge. The services contain the most current information about HP networking products.

North America

1-800-652-6672

Worldwide

HP has technical support centers worldwide. Many of the centers are staffed by technicians who speak the local languages. For a list of HP support centers, select your country from the HP website (http://www.hp.com).

Online Technical Support

The HP Support Forum allows you to post questions, which are answered by HP Online Services. The HP Support Forum is found at the HP Support Forum website (http://h18000.www1.hp.com/support/files/index.html).

Acronyms and abbreviations

LCD

liquid crystal display

OSD

on-screen display

RETMA

Radio Electronics Television Manufactures Association (rack spacing)

RKM

rackmount keyboard monitor

TFT

thin film transistor

USB

universal serial bus

Index